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Page 1 of 7

RAW SEQUENCE LISTING

SEQUENCE LISTING

DATE: 06/04/2002

MAR 0 5 2004

PATENT APPLICATION: US/09/011,307

TIME: 14:54:03

TOH CENTER 1600/2900

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Output Set: N:\CRF3\06042002\I011307.raw

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ENTERED
       (1) GENERAL INFORMATION:
             (i) APPLICANT: Zabeau, Marc
      7
                             Vos, Pieter
      8
                             Simons, Guus
            (ii) TITLE OF INVENTION: RESISTANCE AGAINST WILT INDUCING FUNGI
     10
     12
           (iii) NUMBER OF SEQUENCES: 12
     14
            (iv) CORRESPONDENCE ADDRESS:
     15
                   (A) ADDRESSEE: SPENCER & FRANK
     16
                   (B) STREET: 1100 New York Avenue, N.W., Suite 300 East
     17
                  (C) CITY: Washington
     18
                  (D) STATE: DC
     19
                  (E) COUNTRY: USA
     20
                   (F) ZIP: 20005
     22
             (V) COMPUTER READABLE FORM:
     23
                   (A) MEDIUM TYPE: Floppy disk
     24
                  (B) COMPUTER: IBM PC compatible
     25
                  (C) OPERATING SYSTEM: PC-DOS/MS-DOS
     26
                  (D) SOFTWARE: PatentIn Release #1.0, Version #1.30
     28
            (vi) CURRENT APPLICATION DATA:
C--> 29
                  (A) APPLICATION NUMBER: US/09/011,307
C--> 30
                  (B) FILING DATE: 01-Jul-1988
                                                                 RECEIVED

MAR I 7 2004

TECH CENTER 1600/2900
     31
                  (C) CLASSIFICATION:
     33
           (vii) PRIOR APPLICATION DATA:
     34
                  (A) APPLICATION NUMBER: EP 95401849.5
     35
                  (B) FILING DATE: 07-AUG-1995
     37
          (viii) ATTORNEY/AGENT INFORMATION:
     38
                  (A) NAME: Gollin, Michael A.
     39
                  (B) REGISTRATION NUMBER: 31,957
     40
                  (C) REFERENCE/DOCKET NUMBER: GUPLA 0008
     42
            (ix) TELECOMMUNICATION INFORMATION:
     43
                  (A) TELEPHONE: 202-414-4000
     44
                  (B) TELEFAX: 202-414-4040
     47 (2) INFORMATION FOR SEQ ID NO: 1:
             (i) SEQUENCE CHARACTERISTICS:
     50
                  (A) LENGTH: 19 base pairs
     51
                  (B) TYPE: nucleic acid
     52
                  (C) STRANDEDNESS: single
     53
                  (D) TOPOLOGY: linear
     55
            (ii) MOLECULE TYPE: other nucleic acid
     56
                  (A) DESCRIPTION: /desc = "primer"
            (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
     63 GACTGCGTAC CAATTCNNN
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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/011,307

DATE: 06/04/2002 TIME: 14:54:03

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67 (1) SEQUENCE CHARACTERISTICS: 68 (A) LENGTH: 19 base pairs 69 (B) TYPE: nucleic acid 70 (C) STRANDEDNESS: single 71 (D) TOPOLOGY: linear 73 (11) MOLECULE TYPE: other nucleic acid 74 (A) DESCRIPTION: SEQ ID NO: 2: 75 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 2: 86 (A) SEQUENCE CHARACTERISTICS: 87 (B) TYPE: nucleic acid 88 (C) STRANDEDNESS: single 89 (D) TOPOLOGY: linear 91 (ii) MOLECULE TYPE: other nucleic acid 92 (A) LENGTH: 17 base pairs 93 (2) INFORMATION FOR SEQ ID NO: 3: 94 (C) STRANDEDNESS: single 95 (C) STRANDEDNESS: single 96 (D) TOPOLOGY: linear 96 (C) STRANDEDNESS: single 97 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 97 CTCGTAGACT GCGTACC 101 (2) INFORMATION FOR SEQ ID NO: 4: 103 (i) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 105 (B) TYPE: nucleic acid 106 (C) STRANDEDNESS: single 107 (D) TOPOLOGY: linear 108 (I) MOLECULE TYPE: other nucleic acid 109 (A) DESCRIPTION: MOLECULE acid 100 (A) DESCRIPTION: SEQ ID NO: 4: 115 (X1) SEQUENCE CHARACTERISTICS: 116 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 117 AATTGGTAGC CAGTCTAC 119 (2) INFORMATION FOR SEQ ID NO: 5: 110 (1) SEQUENCE CHARACTERISTICS: 111 (1) SEQUENCE CHARACTERISTICS: 112 (A) LENGTH: 16 base pairs 113 (B) TYPE: nucleic acid 114 (C) STRANDEDNESS: single 115 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 116 (X1) SEQUENCE CHARACTERISTICS: 117 (X1) SEQUENCE CHARACTERISTICS: 118 (X1) SEQUENCE CHARACTERISTICS: 119 (1) SEQUENCE CHARACTERISTICS: 110 (1) SEQUENCE CHARACTERISTICS: 111 (1) SEQUENCE CHARACTERISTICS: 112 (A) LENGTH: 16 base pairs 113 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 115 (SEQUENCE DESCRIPTION: JOE OF OR	65 /2) INFORMATION FOR CEO ID NO. 2.	RECEIVED
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(B) TIPE: Indicate actid (C) STRANDEDMESS: single TI (D) TOPOLOGY: linear (ii) MCLECULE TYPE: other nucleic acid (4 (A) DESCRIPTION: /desc - "primer" (7 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2: 81 GATGACTCCT GAGTAANNN 83 (2) INFORMATION FOR SEQ ID NO: 3: 85 (i) SEQUENCE CHARACTERISTICS: 86 (A) LENGTH: 17 base pairs 87 (B) TTPE: nucleic acid 88 (C) STRANDEDMESS: single 90 (D) TOPOLOGY: linear 91 (ii) MOLECULE TYPE: other nucleic acid 92 (A) DESCRIPTION: /desc - "cligonucleotide" 97 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 99 CTCGTAGACT GGGTACC 101 (2) INFORMATION FOR SEQ ID NO: 4: 103 (1) SEQUENCE CHARACTERISTICS: 104 (A) LENGTH: 16 base pairs 105 (B) TYPE: nucleic acid 106 (C) STRANDEDMESS: single 107 (D) TOPOLOGY: linear 109 (ii) MOLECULE TYPE: other nucleic acid 110 (A) DESCRIPTION: /desc - "cligonucleotide" 111 AATTGGTACC CAGTCTAC 112 (1) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 113 (2) INFORMATION FOR SEQ ID NO: 5: 114 (3) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 115 (21) SEQUENCE CHARACTERISTICS: 120 (A) LENGTH: 16 base pairs 131 (B) TYPE: nucleic acid 124 (C) STRANDEDMESS: single 125 (D) TOPOLOGY: linear 126 (A) DESCRIPTION: /desc - "cligonucleotide" 133 (X) SEQUENCE CHARACTERISTICS: 134 (B) TYPE: nucleic acid 125 (D) TOPOLOGY: linear 136 (A) DESCRIPTION: /desc - "cligonucleotide" 137 (2) INFORMATION FOR SEQ ID NO: 6: 139 (X) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 131 (2) INFORMATION FOR SEQ ID NO: 6: 132 (1) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 133 (X) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 134 (A) DESCRIPTION: For SEQ ID NO: 5: 135 (ACAGTAGAT CCTGAG 136 (X) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 137 (2) INFORMATION FOR SEQ ID NO: 6: 139 (1) SEQUENCE CHARACTERISTICS: 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 144 (C) STRANDEDNESS: single 145 (II) MOLECULE TYPE: other nucleic acid 146 (A) DESCRIPTION: /desc - "oligonucleotide"		MAD O F age.
CO	• • • • • • • • • • • • • • • • • • • •	WAR U 3 2004
10 TOPOLOGY: linear CCH CENTER 1600/2900	, <i>,</i>	
(1) MOLECULE TYPE: Other Nucleic acid (A) DESCRIPTION: /desc = "primer" (A) SEQUENCE DESCRIPTION: SEQ ID NO: 2: 83 (2) INFORMATION FOR SEQ ID NO: 3: 85 (1) SEQUENCE CHARACTERISTICS: 86 (A) LENGTH: 17 base pairs 87 (B) TYPE: nucleic acid 88 (C) STRANDEDNESS: single 99 (D) TOFOLOGY: linear 91 (ii) MOLECULE TYPE: other nucleic acid 92 (A) DESCRIPTION: /desc = "oligonucleotide" 97 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 98 (TOTARANDENDESS: single 99 CTGTAGACT GCGTACC 101 (2) INFORMATION FOR SEQ ID NO: 4: 103 (i) SEQUENCE CHARACTERISTICS: 104 (A) LENGTH: 16 base pairs 105 (B) TYPE: nucleic acid 106 (C) STRANDEDNESS: single 107 (D) TOFOLOGY: linear 109 (ii) MOLECULE TYPE: other nucleic acid 110 (A) DESCRIPTION: /desc = "oligonucleotide" 111 AATTGGTACG CAGTCTAC 112 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 117 AATTGGTACG CAGTCTAC 119 (2) INFORMATION FOR SEQ ID NO: 5: 121 (i) SEQUENCE CHARACTERISTICS: 122 (A) LENGTH: 16 base pairs 123 (B) TYPE: nucleic acid 124 (C) STRANDEDNESS: single 125 (D) TOPOLOGY: linear 127 (11) MOLECULE TYPE: other nucleic acid 128 (A) DESCRIPTION: /desc = "oligonucleotide" 130 (X1) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 131 GAGGATGAGT CTGAG 140 (A) LENGTH: 16 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (I) INFORMATION FOR SEQ ID NO: 6: 139 (I) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 144 (B) STYPE: nucleic acid 145 (I) MOLECULE TYPE: other nucleic acid 146 (B) TYPE: nucleic acid 147 (D) TOPOLOGY: linear 148 (D) TOPOLOGY: linear 149 (D) TOPOLOGY: linear 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: ucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 144 (D) DESCRIPTION: /desc = "oligonucleotide"		TECH CENTED 1600/0000
(A) DESCRIPTION: /desc = "primer"	· ·	1 = 211 OF MITH 1000/5900
79	• • • • • • • • • • • • • • • • • • • •	•
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83 (2) INFORMATION FOR SEQ ID NO: 3: 85	(1.0
### ACT CONTRACT CONTROLL STORM (a) SEQUENCE CHARACTERISTICS: (b) TYPE: nucleic acid		19
86		
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91 (ii) MOLECULE TYPE: other nucleic acid 92 (A) DESCRIPTION: /desc = "oligonucleotide" 97 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 99 CTCGTAGACT GCGTACC 17 101 (2) INFORMATION FOR SEQ ID NO: 4: 103 (i) SEQUENCE CHARACTERISTICS: 104 (A) LENGTH: 18 base pairs 105 (B) TYPE: nucleic acid 106 (C) STRANDEDNESS: single 107 (D) TOPOLOGY: linear 109 (ii) MOLECULE TYPE: other nucleic acid 100 (A) DESCRIPTION: /desc = "oligonucleotide" 115 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 117 AATTGGTACG CAGTCTAC 18 119 (2) INFORMATION FOR SEQ ID NO: 5: 121 (i) SEQUENCE CHARACTERISTICS: 122 (A) LENGTH: 16 base pairs 123 (B) TYPE: nucleic acid 124 (C) STRANDEDNESS: single 125 (D) TOPOLOGY: linear 127 (ii) MOLECULE TYPE: other nucleic acid 128 (A) DESCRIPTION: /desc = "oligonucleotide" 133 (Xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 135 GACGATGAGT CCTGAG 16 173 (2) INFORMATION FOR SEQ ID NO: 6: 174 (3) SEQUENCE CHARACTERISTICS: 175 (4) SEQUENCE CHARACTERISTICS: 176 (5) TOPOLOGY: linear 177 (2) INFORMATION FOR SEQ ID NO: 6: 178 (3) SEQUENCE CHARACTERISTICS: 189 (1) SEQUENCE CHARACTERISTICS: 190 (A) LENGTH: 14 base pairs 191 (C) STRANDEDNESS: single 192 (C) STRANDEDNESS: single 193 (D) TOPOLOGY: linear 194 (D) TOPOLOGY: linear 195 (II) MOLECULE TYPE: other nucleic acid 196 (A) DESCRIPTION: /desc = "oligonucleotide"		
92 (A) DESCRIPTION: /desc = "oligonucleotide" 97 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 99 CTGGTAGACT GCGTACC 17 101 (2) INFORMATION FOR SEQ ID NO: 4: 103 (i) SEQUENCE CHARACTERISTICS: 104 (A) LENGTH: 18 base pairs 105 (B) TYPE: nucleic acid 106 (C) STRANDEDNESS: single 107 (D) TOPOLOGY: linear 109 (ii) MOLECULE TYPE: other nucleic acid 110 (A) DESCRIPTION: /desc = "oligonucleotide" 115 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 117 AATTGGTACG CAGTCTAC 18 119 (2) INFORMATION FOR SEQ ID NO: 5: 121 (i) SEQUENCE CHARACTERISTICS: 122 (A) LENGTH: 16 base pairs 123 (B) TYPE: nucleic acid 124 (C) STRANDEDNESS: single 125 (D) TOPOLOGY: linear 127 (ii) MOLECULE TYPE: other nucleic acid 128 (A) DESCRIPTION: /desc = "oligonucleotide" 133 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 135 GACGATGAGT CCTGAG 16 17 (2) INFORMATION FOR SEQ ID NO: 6: 18 (1) SEQUENCE CHARACTERISTICS: 19 (1) SEQUENCE CHARACTERISTICS: 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 145 (ii) MOLECULE TYPE: other nucleic acid 146 (A) DESCRIPTION: /desc = "oligonucleotide"	• •	
97 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3: 99 CTCGTAGACT GCGTACC 101 (2) INFORMATION FOR SEQ ID NO: 4: 103 (i) SEQUENCE CHARACTERISTICS: 104 (A) LENGTH: 18 base pairs 105 (B) TYPE: nucleic acid 106 (C) STRANDEDMESS: single 107 (D) TOPOLOGY: linear 109 (ii) MOLECULE TYPE: other nucleic acid 110 (A) DESCRIPTION: /desc = "oligonucleotide" 115 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 117 AATTGGTACG CAGTCTAC 118 119 (2) INFORMATION FOR SEQ ID NO: 5: 121 (i) SEQUENCE CHARACTERISTICS: 122 (A) LENGTH: 16 base pairs 123 (B) TYPE: nucleic acid 124 (C) STRANDEDNESS: single 125 (D) TOPOLOGY: linear 127 (ii) MOLECULE TYPE: other nucleic acid 128 (A) DESCRIPTION: /desc = "oligonucleotide" 133 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 135 GACGATGACT CCTGAG 16 17 (2) INFORMATION FOR SEQ ID NO: 6: 139 (i) SEQUENCE CHARACTERISTICS: 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 144 (B) TYPE: nucleic acid 145 (i) MOLECULE TYPE: other nucleic acid 146 (A) DESCRIPTION: /desc = "oligonucleotide" 147 (I) MOLECULE TYPE: other nucleic acid 148 (D) TOPOLOGY: linear 149 (D) TOPOLOGY: linear 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 145 (ii) MOLECULE TYPE: other nucleic acid 146 (A) DESCRIPTION: /desc = "oligonucleotide"		
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103		17
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106 (C) STRANDEDNESS: single 107 (D) TOPOLOGY: linear 109 (ii) MOLECULE TYPE: other nucleic acid 110 (A) DESCRIPTION: /desc = "oligonucleotide" 115 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4: 117 AATTGGTACG CAGTCTAC 18 119 (2) INFORMATION FOR SEQ ID NO: 5: 121 (i) SEQUENCE CHARACTERISTICS: 122 (A) LENGTH: 16 base pairs 123 (B) TYPE: nucleic acid 124 (C) STRANDEDNESS: single 125 (D) TOPOLOGY: linear 127 (ii) MOLECULE TYPE: other nucleic acid 128 (A) DESCRIPTION: /desc = "oligonucleotide" 133 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 135 GACGATGAGT CCTGAG 16 137 (2) INFORMATION FOR SEQ ID NO: 6: 139 (i) SEQUENCE CHARACTERISTICS: 140 (A) LENGTH: 14 base pairs 141 (B) TYPE: nucleic acid 142 (C) STRANDEDNESS: single 143 (D) TOPOLOGY: linear 145 (ii) MOLECULE TYPE: other nucleic acid 146 (A) DESCRIPTION: /desc = "oligonucleotide"		
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158	155	(2) INFORMATION FOR SEQ ID NO: 7:	
159 (B) TYPE: nucleic acid 160 (C) STRANDEDNESS: single 161 (D) TOPOLOGY: linear 163 (ii) MOLECULE TYPE: other nucleic acid 164 (A) DESCRIPTION: /desc = "primer" 169 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7: 171 GACTGGGTAC CAATTC 16 173 (2) INFORMATION FOR SEQ ID NO: 8: 175 (i) SEQUENCE CHARACTERISTICS: 176 (A) LENGTH: 16 base pairs 177 (B) TYPE: nucleic acid 178 (C) STRANDEDNESS: single 179 (D) TOPOLOGY: linear 181 (ii) MOLECULE TYPE: other nucleic acid 182 (A) DESCRIPTION: /desc = "primer" 187 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8: 189 GATGAGTCCT GAGTAA 16 191 (2) INFORMATION FOR SEQ ID NO: 9: 193 (i) SEQUENCE CHARACTERISTICS: 194 (A) LENGTH: 19 base pairs 195 (B) TYPE: nucleic acid 196 (C) STRANDEDNESS: single 197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 100 (A) DESCRIPTION: /desc = "primer" 105 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 107 GACTGCGTAC CAATTCAGA 19 19 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 219 (2) INFORMATION FOR SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (1) SEQUENCE DESCRIPTION: /desc = "primer" 221 (xi) SEQUENCE DESCRIPTION: /desc = "primer" 222 (2) INFORMATION FOR SEQ ID NO: 11: 225 GATGAGTCCT GAGTAATCT 19 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (1) SEQUENCE DESCRIPTION: /desc = "primer" 220 (2) INFORMATION FOR SEQ ID NO: 11: 221 (1) SEQUENCE DESCRIPTION: /desc = "primer" 222 (2) INFORMATION FOR SEQ ID NO: 11: 223 (1) SEQUENCE DESCRIPTION: /desc = "primer" 224 (2) INFORMATION FOR SEQ ID NO: 11: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 228 (1) SEQUENCE DESCRIPTION: /desc = "primer" 229 (2) INFORMATION FOR SEQ ID NO: 11: 220 (1) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 223 (2) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 224 (2) SEQUE	157	(i) SEQUENCE CHARACTERISTICS:	
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189 GATGAGTCCT GAGTAA 16 191 (2) INFORMATION FOR SEQ ID NO: 9: 193 (i) SEQUENCE CHARACTERISTICS: 194 (A) LENGTH: 19 base pairs 195 (B) TYPE: nucleic acid 196 (C) STRANDEDNESS: single 197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 19 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 220 (Xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 221 GATGAGTCCT GAGTAATCT 19 222 (2) INFORMATION FOR SEQ ID NO: 11: 223 (Xi) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
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193 (i) SEQUENCE CHARACTERISTICS: 194 (A) LENGTH: 19 base pairs 195 (B) TYPE: nucleic acid 196 (C) STRANDEDNESS: single 197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 19 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 221 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 222 GATGAGTCCT GAGTAATCT 223 (xi) SEQUENCE CHARACTERISTICS: 224 (A) LENGTH: 6658 base pairs 235 (B) TYPE: nucleic acid 236 (C) STRANDEDNESS: single			16
194 (A) LENGTH: 19 base pairs 195 (B) TYPE: nucleic acid 196 (C) STRANDEDNESS: single 197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 19 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 229 (i) NFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
195 (B) TYPE: nucleic acid 196 (C) STRANDEDNESS: single 197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 220 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
196 (C) STRANDEDNESS: single 197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 19 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 19 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
197 (D) TOPOLOGY: linear 199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single		· ·	
199 (ii) MOLECULE TYPE: other nucleic acid 200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
200 (A) DESCRIPTION: /desc = "primer" 205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single		, , ,	
205 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: 207 GACTGCGTAC CAATTCAGA 209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
207 GACTGCGTAC CAATTCAGA 209 (2) INFORMATION FOR SEQ ID NO: 10: 211			
209 (2) INFORMATION FOR SEQ ID NO: 10: 211 (i) SEQUENCE CHARACTERISTICS: 212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			10
(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 19 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "primer" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 25 GATGAGTCCT GAGTAATCT (i) SEQUENCE CHARACTERISTICS: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 6658 base pairs (B) TYPE: nucleic acid (C) STRANDEDNESS: single			10
212 (A) LENGTH: 19 base pairs 213 (B) TYPE: nucleic acid 214 (C) STRANDEDNESS: single 215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 19 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single			
(B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "primer" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 25 GATGAGTCCT GAGTAATCT (2) INFORMATION FOR SEQ ID NO: 11: (i) SEQUENCE CHARACTERISTICS: (i) SEQUENCE CHARACTERISTICS: (ii) SEQUENCE CHARACTERISTICS: (iii) SEQUENCE CHARACTERISTICS: (iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii			
(C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc = "primer" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 25 GATGAGTCCT GAGTAATCT 19 (2) INFORMATION FOR SEQ ID NO: 11: (i) SEQUENCE CHARACTERISTICS: (i) SEQUENCE CHARACTERISTICS: (b) TYPE: nucleic acid (c) STRANDEDNESS: single			
215 (D) TOPOLOGY: linear 217 (ii) MOLECULE TYPE: other nucleic acid 218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 19 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	214	• •	
218 (A) DESCRIPTION: /desc = "primer" 223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	215	(D) TOPOLOGY: linear	
223 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10: 225 GATGAGTCCT GAGTAATCT 19 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	217	(ii) MOLECULE TYPE: other nucleic acid	
225 GATGAGTCCT GAGTAATCT 227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	218	(A) DESCRIPTION: /desc = "primer"	
227 (2) INFORMATION FOR SEQ ID NO: 11: 229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	223	(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:	
229 (i) SEQUENCE CHARACTERISTICS: 230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	225	GATGAGTCCT GAGTAATCT	19
230 (A) LENGTH: 6658 base pairs 231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single	227	(2) INFORMATION FOR SEQ ID NO: 11:	
231 (B) TYPE: nucleic acid 232 (C) STRANDEDNESS: single		(i) SEQUENCE CHARACTERISTICS:	
232 (C) STRANDEDNESS: single			
233 (D) TOPOLOGY: linear			
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, ,	238	(ix) FEATURE:	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/011,307

DATE: 06/04/2002 TIME: 14:54:03

Input Set : A:\0008.app

Output Set: N:\CRF3\06042002\I011307.raw

000			/											
239		(A) NA	•											
240		(B) LO							_					
243	(xi) S													
	AAAAAAGCAG													60
	GCAGTTATGT													120
	AATGGAAGAA													180
	GGCAAAAAA													240
	GGGTAGAGGT													300
	TTTTTKTTGC													360
	TTTCTCCCAT													420
	CATAACTGCT													480
	TTTTATTAAG													540
	AACTCCGTAA													600
	TAAATTGGGT													660
	ATTAAGACCC													720
	GGTGAAAGTC													780
	GGAGAAAAA													840
	TGCAACTCAT													900
	AAGATACATT													960
277	TGATATAACT	TAAAA	GAAGT	TGTTT	GATAI	CT	ratc?	AGAA	TCA:	rgca(GT A	ACTC	ATAATA	1020
279	TAAGAAATAA	TTATG	ATGAA	ATTTA	TATAT	GT	TTTA	IGCA	GAG	ATTTA	ATT A	ACGC!	ATTGTT	1080
281	TACTTGGGTT	ATGTA'	TTACT	TATTT	CATCI	TT	FATC	AGAA	TGT	AAAA	TA !	TCAT	CAATA	1140
283	AGAAATCCAA	TTCTG'	TTAAA	TTCAA	AATAC	: AA	ACAA	TAAC	ATT	TTCA <i>I</i>	AGA (CCGAT	TTTTTT	1200
285	GCCCAAGAAT	ATACA	GTAAA	CATAT	TTATO	ATA	ATGG	ragg	TCT	CTTT	AGT A	AATTO	GACCAA	1260
287	CAAGGATTGT	GGTGG	AGTGG	GAAAT	ACTCI	TT	AATAO	CTTC	ACC	AAGA	GT (CTCC	ATTTG	1320
289	AGCCCCTGAA	TACGA	AATCG	TCTTT	GTTAC	TA	CATA(CCCT	AAC	CTAA	CAC A	AAAA	ATTAGT	1380
	ATATTAGCCT													1440
	GTAACACCAA													1500
295	AGAAATTTAT	TACTT	GAGGG	CCCTT	TCTAC	ACC	CCAC	CCTT	ATTO	CTCTT	rgc :	TTCA	TTATT	1560
	GAATTGAAGA													1620
	CTGTAACAAT													1680
	AATTACTCTT													1740
	ATTTTGTTAA													1797
	ATG GAG AT													1845
	Met Glu Il													
307	1	•	5		4	4	10					15		
309	AAT GTT CT	G TTT (G CTT	GCT	ССТ		GGT	GAT	CTG	СТС		ATG	1893
	Asn Val Le													1033
311		20		,		25		1	op		30		1100	
	TTT CGG AA		AAG GA	T CAT	GTT		CTC	тта	AAG	AAG		AAA	ATG	1941
	Phe Arg Ly													. 1741
315	3			F	40	_,_	204		_,5	45	Lea	Lys	ricc	
	ACT TTG CG		מי חיים	ር ልጥጥ		ር ጥ አ	ΔСΤ	САТ	CCA		አአጥ	AAC	CAA	1989
	Thr Leu Ar													1909
319	50	, <u>-</u> - 1	01	55	, 41	Lu	DGI	usb	60	Jiu	សភាព	כעם	3111	
	GCA TCA AA	י רכש י	ጥርጥ ርጥ		GAC	ጥርር	Сфф	יי מ מ		Сфф	CGA	CAT	CCT	2027
	Ala Ser Asi													2037
323	65			0	rab	115	Leu	75	GIU	ьeu	лту	vsh	80	
	GTC GAC TC	י ככיי י			ልጥል	CAA	CAA		ייי א א	ייטיעייח	GNA	CCT		2005
J & J	GIC GAC IC.	. GCI (ORR AM	T TIM	VIW	GMM	GAA	GIC	MAT	IAI	GAA	GCT	116	2085

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326 327	Val	Asp	Ser	Ala		Asn	Leu	Ile	Glu		Val	Asn	Tyr	Glu		Leu	
	N.C.C	C m m	7 7 C	CMC	85	CCM	a a	O a m	03.0	90	m m m	max	~		95		
	AGG																2133
331	Arg	Leu	гу		GIU	СТУ	GTII	HIS		ASII	Pne	ser	GIU		ser	Asn	
	CAC	(1 N N	Cmx	100	CAM	73 m		mma	105				a. a	110			
	CAG																2181
335	Gln	GIII	115	Ser	кър	ASP	Pne	120	ьeu	ASII	тте	газ		гÃг	ьeu	GIU	
	GAC	а Ст		CAA	አሮአ	מיחים א	7 7 C		mmc	C 2 2	CAC	(T))	125	ccm	ama	Cmm	2220
	Asp																2229
339	изр	130	116	GIU	1111	ьeu	135	nsp	Leu	GIII	GIU	140	TTE	СТУ	Leu	Leu	
	GGC		ΔAG	GAG	πаπ	արար		TCC	» CC	א א א	CITIA		х Ст	אכא	7 C 7	CCM	2277
	Gly																2277
	145	Dea	1,5	Olu	- 7 -	150	изр	261	1111	цуз	155	GIU	1111	ALY	AIG	160	
	TCA	АСТ	ጥረጥ	стс	СДТ		CAA	ጥርጥ	CAT	ΔΨС		CCT	NGC.	CAC	አሮሮ		2325
	Ser																2323
347	-		001	, 41	165	p	O_Lu	DCI	пор	170	rne	GLY	мту	GIII	175	Giu	
	ATA	GAG	GAT	TTG		GAC	CGT	СТА	TTG		GAA	сст	GCA	ΔСΤ		λλλ	2373
	Ile																23/3
351			1	180		<u>F</u>	5		185		0	011		190	017	273	
	AAG	CTG	ACA		GTT	CCT	ATC	GTT		ATG	GGC	GGC	CAG		AAG	ACA	2421
	Lys																2721
355	•		195					200	1		1	 1	205				
357	ACA	CTT	GCT	AAA	GCC	GTA	TAC		GAT	GAG	AGG	GTG		ААТ	САТ	TTT	2469
	Thr																
359		210		_			215		-			220	_				
361	GAT	TTG	AAA	GCG	TGG	TAT	TGC	GTT	TCT	GAA	GGA	TTT	GAT	GCT	TTG	AGA	2517
	Asp																
	225					230					235		-			240	
365	ATA	ACA	AAA	GAA	TTA	CTC	CAA	GAA	ATT	GGC	AAA	TTT	GAC	TCG	AAG	GAT	2565
366	Ile	Thr	Lys	Glu	Leu	Leu	Gln	Glu	Ile	Gly	Lys	Phe	Asp	Ser	Lys	Asp	
367					245					250					255	_	
369	GTC	CAC	AAC	AAT	CTT	AAC	CAG	CTT	CAA	GTC	AAA	TTG	AAG	GAA	AGT	TTG	2613
	Val	His	Asn		Leu	Asn	Gln	Leu	Gln	Val	Lys	Leu	Lys	Glu	Ser	Leu	
371				260					265					270			
	AAG																2661
	Lys	Gly		Lys	Phe	Leu	Ile		Leu	Asp	Asp	Val	Trp	Asn	Glu	Asn	
375			275					280					285				
377	TAC	AAC	GAG	TGG	AAT	GAC	TTG	AGA	AAT	ATT	TTT	GCA	CAA	GGA	GAT	ATA	2709
	Tyr		GIu	Trp	Asn	Asp		Arg	Asn	Ile	Phe		Gln	Gly	Asp	Ile	
379		290					295					300					
	GGA																2757
	Gly	ser	гла	тте	тте		Tnr	rnr	arg	ьys		ser	val	Ala	Leu		
383		CCA	חתת	020	(1 A A	310	000	3 m ~	000		315	m.c				320	
	ATG																2805
387	Met	GTÄ	ASII	GIU		тте	Arg	мет	СΤΆ		ьеи.	ser	rnr	GLU		ser	
	TICC	m/cm	ע ידוידו	முற்ற	325	7.77	CI A ITT	CCA	mmm	330	***	a ma	O 2 TT	aa	335	663	0055
	TGG																2853
220	Trp	SeT	neu	File	GTII	'AT.Q	uis	ATG	rne	GIU	ASN	мет	Asp	Pro	мет	GTÄ	

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/011,307

DATE: 06/04/2002 TIME: 14:54:04

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